

What is claimed:

1. A semiconductor diffusion prevention structure, comprising:
a silicide layer formed on a semiconductor substrate; and
a ternary phase layer formed on said silicide layer.
2. The structure of claim 1, wherein said ternary phase layer is a Co-Ti-Si layer.
3. A semiconductor device, comprising:
a semiconductor;
an insulator film formed on said substrate to define a contact hole such that said substrate is exposed;
a silicide layer formed on said substrate and in said contact hole;
a diffusion prevention layer on said silicide layer;
a conductive plug on said diffusion prevention layer in said contact hole; and
a conducting layer on said conductive plug;
4. The semiconductor device of claim 3, wherein said diffusion prevention layer is a ternary phase layer.

5. The semiconductor device of claim 4, wherein said ternary phase layer is a Co-Ti-Si layer.